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Acute Abdomen

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The term 'Acute Abdomen' is rather an unscientific one. It appeals very well to the layman's mind, but does not speak of the pathology behind In indicates the severity of the illness and that the trouble is inside the abdomen. The causes may be many and varied; but there is a common clinical appearance arising from diverse pathological conditions, and such a clinical entity constitutes the Acute Abdomen.

I do not intend or presume to bring out in this short resume, the manifold aspects of this condition But I hope to place before you some of the salient points that should interest the general practitioner in special As you all know, the mortality arising from this condition is high; and late diagnosis makes it higher still Hence the plea for an earlier diagnosis The incidence of acute abdomen, as observed from the wards of the General Hospital, Madras, for the last 10 years is getting lower and lower. This is, no doubt, a notable advance in the efficiency of medical practitioners, and the ease and confidence with which the people take to surgery The days of nightmare for the knife are rapidly receding And this welcome change contributes a great deal to the cure of catastrophic conditions of the abdomen.

Some are apt to include cases of acute appendicitis and cholecystitis, under this nomenclature. But this is not strictly correct. These conditions may give rise to general peritonitis, and then alone it should be called Acute Abdomen. The causes may be classified under two main groups:

1. *Inflammatory.*
2. *Obstructive*

Those beginning with inflammation end in obstruction; and those beginning with obstruction may end in perforation and peritonitis, if the patient survives the toxic effects of obstruction Thus it will be clear that the diagnosis of inflammatory or obstructive lesion may not be possible unless the patient comes in early stages. For example, in a case of perforated duodenal ulcer, the classical board-like rigidity gives way to distension in 24 hours time and the specialist who tackles the case will be well advised to rely on the family doctor s findings at the onset of the illness rather than his own

Inflammatory lesions of the peritoneum are by far commoner than *obstructive* lesions, as producing the clinical entity of acute abdomen. Inflammation in the peritoneum, unlike

A paper read before the Conjeevaram District Medical Association

in other regions, is attended with serious consequences to the individual for, various reasons

1 The area of the peritoneum is very extensive and approximates almost to the skin surface. For this reason the shock arising from irritation or inflammation of the peritoneum is great indeed We are familiar with the intensity of shock and collapse resulting from burns extending more than one third the area of the skin surface Irritation of nerve terminals and absorption of toxic matter over a wide area causes a vital blow to the patient.

2. Such inflammation simultaneously irritates and weakens the nerves and musculature of the alimentary canal, producing paresis of the gut Due to the stoppage of peristalsis of, and the anaerobic activity in the gut, gases accumulate inside the bowels, produce distension kinks and embarass the heart. The toxins of B Welchii, generated in the lumen of the bowel and the bacterial poisons in the peritoneum weaken the myocardium. Further a proteose is liberated in the wall of the intestine producing profound circulatory collapse Dehydration, due to vomiting; and bleeding into capillaries through shock becomes the last straw on the camel's back

Fortunately for us, of all the tissues of the body, peritoneum is the most resistant, next to skin The Great Omentum acts the Policeman, insinuating its finges, at the points of attack, enveloping the bacteria and pus, localising the infection and if possible absorbing it. Further the disposition of the mesentery in the great cavity of the abdomen has divided it into compartments such as pouches, gutters and cesspools, localising the infection by holding in defence the invading bacteria or directing them into special channels where they are innocuous The reflex local rigidity of the abdominal wall and the cessation of movement of the underlying gut, minimises very much the chances of diffusion of the imprisoned germs. Further the inflamed peritoneum readily becomes adherent at the contiguous surfaces and locks up the little locules of pus But for such natural defences, peritoneal invasion should have been a worse calamity Here I should sound a note of warning, that the peritoneum of children has a poor resistance. Experience has taught the surgeon to rely upon the peritoneum in looking after itself, so that he no longer swabs, mops or lavages; but removes the source of infection; e g appendix or gallbladder and drains the abdominal cavity It is now believed that swabbing and lavage are definitely injurious Local variations in the resistance of the peritoneum have been noted Pelvic peritoneum has a high degree of resistance while subphrenic peritonitis is considered a grave affair. This has been one of the reasons for the adoption of the Fowler's position

Peritonitis may be infective or irritant. The latter arises from

1. Bleeding into the peritoneal cavity e g Ectopic gestation, Rupture of the spleen or liver, Tear of the Mesentery etc

2 Extravasation of bile or gastric juice e.g Perforation of a Peptic Ulcer or Gallbladder ;

3 Extravasation of urine, e g Rupture of the kidney, ureter or bladder. Some cases of irritant peritonitis subside; while others become infected sooner or later; e g Peritonitis of a duodenal perforation starts as an irri-

tant one and becomes infective later on;

4 Extravasation of Pancreatic Juice, e g. as in Acute Haemorrhagic Pancreatitis

Infective Peritonitis Infection may reach the peritoneal cavity through the blood stream, when it is called Acute Primary Peritonitis Rupture or perforation of any part of the alimentary canal directly produces the infection, when the condition is called Secondary Peritonitis Germs may travel through the walls of the diseased bowel without any actual perforation In the female sex, the peritoneal cavity is open to the exterior, through the Fallopian tube, which forms an additional path of infection Penetrating injuries from the exterior may introduce germs into the cavity Lastly, though rarely, surgical intervention in the abdominal cavity has occasionally given rise to peritonitis I should take this opportunity to mention that the abdominal muscular defence, in peritonitis is not a marked feature in cases of postoperative peritonitis

To give you a typical example of an acute abdomen, I would like to invite your attention to a perforated duodenal ulcer, which seems to be the mainstay of surgeons in South India The patient is usually a young adult, with a history of abdominal pain in the epigastrium, aggravated by food and of unusual severity and the family doctor considers it as an acute exacerbation of his old malady Alkaline powders give no relief This may be considered as the first or the preperforative stage During the second stage of perforation the pain is suddenly relieved and the patient thanks the alkaline powder, if not his doctor This is sometimes followed by a lucid interval, when he walks into a hospital, neither the patient nor the doctor knowing what has happened. His pulse is normal, if anything slow; abdomen scaphoid and tenderness present in the epigastrium. The fourth stage of peritoneal invasion is the typical abdomen described in books. The patient lies on his back, absolutely immobile, holds his breath, and appears to be in mortal fear of talking. His face is rather pale, pulse slow, respiration thoracic, and has board like rigidity and tenderness in the abdomen Obliteration of liver dulness and free fluid in the flanks may be clinically elicited The immobile nature of the patient is almost an unmistakable evidence. If the patient rolls and cries with pain, it is against the diagnosis Now the patient slowly, but steadily passes on to the fifth stage of distension, in 24 hours time. The rigidity gives way to distension, due to the fatigue of contracting muscles and gradual distension of the gut, arising from paralysis The last or final stage is reached in 48 to 72 hours when the patient is bloated up, due to paralytic ileus and presents the facies Hippocratica, due to severe circulatory collapse, toxaemia and dehydration, with rapid thready pulse, cold clammy sweats, but bright eyes and a wakeful conscience to the very end. The surgeon usually sees the patient, a few hours, after perforation while the rigidity is gradually disappearing; but the family doctor sees him earlier, when rigidity is on For this reason, the specialist will be well advised to go by the findings of the general practitioner than his own Vomiting in these cases is not a marked feature It may be present in the early stages due to peritoneal irritation and in the later stages due to toxaemia and paralytic obstruction

The treatment consists in opening the abdomen, closing up the perfora-

tion and putting in a drainage tube in the pelvis. A gastrojejunostomy at this time is better not done 20 c c. of antiperitonitic serum is poured into the peritoneal cavity before closing the abdomen. The mortality of this condition is practically nil, if operated on within 6 hours. It may roughly be estimated as 25 per cent more with every 24 hours of delay. The responsibility of the family doctor becomes sufficiently obvious from this statement. The earlier the operation, the better for the patient Here I must state that during the shock, immediately after the perforation, the patient should not be interfered with. In 2 hours time, as the patient begins to recover from the shock, it should be considered as the optimum time for surgical interference.

Whatever may be the cause of the acute abdomen, the clinical picture in the later stages is more or less the same Hence, a preoperative diagnosis of the underlying pathology is often difficult and the operation becomes exploratory An intelligent peep into the history of his past ailments and the exact site and mode of onset if available, may give us a clue as to the cause. This is often not possible in our country. When the abdomen is opened under a suitable anaesthetic, in a case of acute abdomen, *Gas, Fluid, Blood, Pus* or *Distended loops of gut* may present themselves Each of them has its own significance. *Gas* indicates perforation of a hollow viscus *Fluid* may be acid in the case of the stomach, alkaline and bilestained from duodenum or gallbladder; or may have a urinary smell in case of rupture of the urinary system Serosanguinous fluid is obtained in volvulus of the sigmoid, streptococcal infections, and in the early stage of any other peritonitis. The presence of blood must remind the surgeon of an ectopic gestation, rupture of the spleen or liver, or a tear in the mesentery. *Pus* with a faeculent odor is characteristic of B Coli infection. Thin brown pus means streptococcal. Thick white pus indicates staphylococci or B Coli, and green pus means pneumococci If fluid does not well out and instead distended loops present, it is primarily a case of intestinal obstruction or strangulation

Intestinal obstruction or strangulation can produce peritonitis in later stages, but usually patient dies before actual pus formation On the other hand, peritonitis can produce distension of the bowels, but in the presence of frank purulent pus, inflammation is the more likely cause The operator aspirates the pus, and follows its tract usually towards the region of the appendix. The areas are packed off and the appendix removed if possible. If the appendix is normal, he follows the right paracolic gutter towards the duodenum and the gallbladder and sutures the perforation if any; failing this he goes down into the pelvis, aspirates the pus, looks for a pyosalpinx in women or a diverticulitis of the pelvic and sigmoid colon in either sex If nothing is found. he should look for acute haemorrhagic pancreatitis Fat necrosis of the omentum should have already shown itself. Failing to find a pathological lesion, he diagnoses it as a case of primary peritonitis, puts in one or more drainage tubes, in the pelvis and flanks and closes the abdomen; and treats the general condition on general lines.

Diagnosis of the presence of acute abdomen is comparatively an easy matter; but determination of the site and nature of the exact pathological lesion may not be often possible without opening the abdomen. Its presence

should be determind by the history and ,discovery of the following clinical signs and symptoms :—

	24 hours	48 hours	72 hours
1. Pain	—		—
2. Rigidity	—		
3. Tenderness	—		—
4. Vomiting	—		—
5. Shock	—		—
6. Temperature		—	
7 Leucocytosis		—	
8 Hyperasthesia	—		
9. Distension			—

Some of the signs and symptoms are represented above to show the time periods of their occurrence A rising pulse rate with a falling temperature is an indication of the spread of peritonitis; while a fall in pulse rate with a rise in temperature is a happy sign of localisation of pus

Differential Diagnosis of acute abdomen from certain other causes producing acute abdominal pain has often to be made For this reason, they have been classified into three groups (1) Medical causes (2) Surgical, but not catastrophic (3) Surgical and catastrophic The last group constitutes acute abdomen, while the second one may any time become catastrophic

1. *a* Pulmonary—Pneumonia, diaphragmatic pleurisy etc.

   b Alimentary--Indigestion gastritis, colitis etc

   c. Vascular –Coronary thrombosis, angina pectoris, mesenteric thrombosis

   d Metabolic—Diabetes, tetany.

   e Infective—A l i m e n t a r y influenza and malaria ; tetanus.

   f Nervous—Vertebral and spinal tumours ; Tabes dorsalis etc

2. Peptic ulcer; Biliary, urinary and intestinal colics; chronic diseases of the appendix, gall bladder, colon etc.

3. Perforation, Inflammation, Gangrene, obstruction and strangulation of any of the contents of the abdomen

It will be obvious from the above that elimination of the groups 1 and 2 is essential for the establishment of acute abdomen.

Acute Intestinal Obstruction is not an infrequent cause of acute abdomen. Strangulated and obstructed herniae contribute the major part Inguinal herniae are the rarest to get strangulated; while they are the commonest of strangulated herniae Intestinal obstruction may be due to simple obstruction or strangulation The latter indicates interference with blood supply due to a tight constriction as at the internal ring; or blockage of a mesenteric vessel as in thrombosis or embolism Morta-

lity of strangulated inguinal herniae is high, about 17 per cent; but the percentage mortality, compared with other types of strangulations is comparatively low, the condition being usually external and early detected The death in simple obstruction is due to vomiting, acidosis, dehydration and anaerobic toxaemia, while strangulation usually means simple obstruction plus vascular interference If the loop strangulated is large, the patient may die immediately of shock resulting from fluid loss, and traction of the mesenteric nerves. If of moderate size, from the absorption of proteose in about 24 hours time; if of small size, as in the average case, from gangrene, perforation and peritonitis. The mortality of acute obstruction is about 40 per cent in all cases, volvulus heading the list and strangulated inguinal herniae being the last.

1. Gallstone Obstruction	50 per cent Mortality.
2. Cancer of the large bowel	45 per cent
3. Adhesions	30 per ceut
4. Internal strangulation	33 per cent
5. Volvulus	51 per cent
6. Intussuseption	22 per cent
7. Strangulated Inguinal Herniae	16 per cent
Femoral Herniae	20 per cent
Umbilical Herniae	35 per cent

Mr. Souttar.

The higher the obstruction, the quicker and the severer are the symptoms, and the higher the mortality Tighter and extensive strangulations are exceedingly fatal. More than 90 per cent of strangulations affect the small gut Simple obstruction of the large bowel due to cancer is nearly always an acute on chronic one, hence it is advisable to make an attempt to convert the acute back into chronic obstruction by waiting and giving repeated enemata and other measures to relieve the congestion, above the obstruction. The importance of this becomes obvious as the mortality of acute obstruction is very high, unlike in chronic, and the symptoms in the latter are usually mild and the danger of waiting is not very much. Functional or Paralytic or Adynamic Obstruction is obstruction without obstruction; and it usually involves the small bowel

The causes of strangulative obstruction:—1 External and Internal Herniae 2 Volvulus, 3 Intussusception, 4 Mesentric occlusion, 5 and Tight bands Sudden relief of such strangulation is attended with disastrous results, due to the absorption of proteose and other toxic material from the obstructed loop This has been one of the objections to the exteriorisation of a doubtfully gangrenous loop instead of resection and anastamosis

Causes of Obstruction

Higher gut	Lower small gut	Large gut
Acute Dilatation, Duodenal obstruction, High jejunal kinks	Gallstone, Cicatricial, Postoperative Paralytic Ileus	Cancer, Diverticulitis Adhesions, Strictures, Hirschsprung's disease, Faecal Impaction etc

Pain in the early staged of acute abdomen is due to forced peristalsis and traction on mesentery Later on distension of the gut produces a dull aching pain. Vomiting in the early stages is reflex, later on regurgitant, (reversed central stream and not reversed peristalsis); and finally toxic in nature. Pain and vomiting are early and acute in high obstructions, while constipation is not a marked feature On the other hand, constipation is early and marked in large bowel obstruction, enema returning negative Absence of flatus is the sure test for complete obstruction The pattern of distension gives a clue to the site of obstruction Distension of the colon is better seen in the flanks and the ladder pattern in the small gut distension Borborygmi on abdominal auscultation indicates to mechanical obstruction and the absence of it to paralytic ileus. Of late, the radiologists have succeeded to a certain extent in diagnosing the seat of obstruction by fluid levels and gas.

Diagnosis must be made of

1 The existence of acute abdomen,

2 The presence of obstruction,

3 Whether it is simple or strangulative,

4 High, low or large gut etc. The surgeon may be able to decide some or all of these points before operatton. If the pain is severe and operation is decided on, morphia may be injected, Large amount of intraveneous glucose saline is given to combat dehydration. Stomach wash may be done to prevent aspiration pneumonia, especially if general anaesthesia is being employed Urine is removed befoie going to the table. Spinal anaesthesia is preferable, because the bowel will act soon after the release of obstruction. Some object to its use, fearing the bowel above the obstruction may rupture due to forcible contraction

The incision will vary with the preoperative diagnosis, and will be in most cases one-third above the umbilicus and two-thirds below If distended loops of sigmoid or transverse colon present in the wound, the obstruction is below such points Next palpate the internal hernial orifices, and nothing may be seen Now palpate the caecum; if distended the obstruction is below, and therefore follow up the colon to the rectum (rectal examination ought to have been done before) If collapsed, follow up the ileum to the point of obstruction and dilatation and deal with the condition as required.

I have in the foregoing few pages, attempted to give a brief sketch of certain aspects of acute abdomen, a detailed study of which does not come within the scope of this article The comparative suddenness of this catastrophy and the apparent lack of surgical aid in rural areas form a helpless, disastrous and deplorable problem, at present difficult to get over However a lot can be prevented by the general practitioner by correct understanding and close application of the first principles of surgery and by helping the helpless peasants by early and correct advice At the same time, the undergraduates and the postgraduates, leaving the clinical hospitals must be made to learn in detail all about acute abdomen, no matter whether they know the diagnosis of a brain tumour or not Then that will contribute a real advance to the realm of life-giving surgery.

The Treatment of Infantile Cirrhosis of the Liver

by

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The subject of the treatment of Infantile Biliary Cirrhosis is a difficult one, and the general public and the medical profession believe that we do not have a certain cure for this malady But how can we offer a true and effective remedy for this disease the etiology of which is yet under speculation? People who have tasted failure with our methods of treatment are reluctant to trust again in scientific medicine, and so try various preparations which have created in the minds of the public as well as in a few medical men, the impression of being true specifics for Infantile Hepatic Cirrhosis, owing to sheer advertisement and propaganda in the lay Press As a rule most of our treatment for this disease is symptomatic However in the following few lines, I shall outline the principles of treatment that have been based upon certain probable etiological factors

The consideration of the treatment falls under two heads-Curative and Prophylactic

I Curative This can be considered under three sub-divisions

(a) Hygienic In all acute and subacute cases rest in bed is essential In chronic cases rest in bed is necessary for the most part of the day The child requires plenty of sunshine, if not ultra-violet ray exposures to the abdomen The environment must be healthy and the climate bracing

(b) Dietetic. In every case attention to the diet is of paramount importance. The diet consists essentially of diluted skimmed milk, fruit juices, light vegetable soups, malted milk, a little double boiled rice, weak tea or coffee, and plenty of glucose To older children barley water and butter milk might be allowed in addition An aim is kept on forming a mixed diet free from excess of fat. Tomato juice is an excellent addition to the child's daily menu. Avoidance of tubers, sweets, hard irritating and fibrous food and fermenting diet, is important Among the fruits, oranges, lemons, sweet limes, papaya, grapes, pomegranates and wood apple might be given freely Some workers like Radhakrishna Rao and Gothoskar prefer goat's or ass's milk to cow's milk, but in my opinion next to mother's milk, diluted skimmed cow's milk to which a balanced carbo-hydrate like Karo syrup has been added, is to be preferred to ass's or goat's milk.

(c) Medicinal. (1) *Specific.*

Treatment cannot wait till the exact cause of the disease is discovered and till such time, it has necessarily to be empirical Prabhu was led to prescribe Zinc in the form of an oxide on the result of the analysis of one of the commonly used indigenous preparations for liver complaints In his hands, it has proved quite harmless and seemed to retard the progress of the disease

even in advanced cases Nobody is able to explain the action of Zinc on the liver I have attempted to modify the evolution of toxic cirrhosis due to carbon tetra-chloride in experimental animals, like albina rats, by simultaneous oral administration of vitamins A and C and Zinc oxide, suspended in olive oil and the last mentioned drug has definitely delayed the induction of cirrhosis and produced a milder type of fibrosis of the liver in the animals Narayanamurti advocates the use of Merck extra pure Zinc Oxide But I have used ordinary Zinc Oxide in daily doses of 1½ to 3 grains, in combination with other cholagogues An useful prescription is as follows:

Zinc oxide	gr. 1½
Hyd Cum Creta	gr. 1½
Pulv. Rhei Co	gr. 6

Ft. pulv. 3 one T D.S.

Sometimes a daily injection of 5 to 10 units of Zinc-protamine-Insulin with oral glucose administration has yielded good results,

Vitamin C is another excellent drug for use in Infantile Cirrhosis as it has been found to be very efficacious to control the intestinal toxaemia and dehydrate the dropsical organs by increasing the urinary output. Sarma found excellent results with Vitamin C both orally and parenterally I have also found clinically Vitamin C to be beneficial and my route of choice has been the oral one A daily administration of one tablet of Redoxon (50 Mgm of Vitamin C) supplemented with plenty of orange and lime juices is adequate Treatment with Vitamin C is rational, as it has a direct action on the endothelial integrity of the hepatic capillaries and the essential lesion of the Infantile Hepatic Cirrhosis is endothelial damage resulting in swelling and spasm with later fibrosis of the hepatic venous terminals. This theory of genesis of the fibrosis of the hepatic venous terminals has been put forward by my Professor Dr. P Ramachandra Rao, and my experimental work at the Pathology laboratory of Madras Medical College confirms the above findings. Further, simultaneous administration of Vitamin C to animals undergoing induction of experimental toxic cirrhosis has prolonged the relative period of induction more than in the control animals. Sarma has found beneficial results with oral administration of adrenal cortex which is supposed to be rich in Vitamin C, and anti-marasmic and anti-allergic factors, but I have had no experience with this product

Another drug which has inspired in me a hope of proving to be a fair remedy especially in early cases is Acetyl Choline The exact pathogenesis of the pre cirrhotic central necrosis in Infantile Cirrhosis was suggested by Dr Ramachandra Rao to be vascular (ischaemic) in nature and probably resulted from a vasomotor in-balance (vaso spasm due to sympathetico-tonia) induced by the toxin Though Radhakrishna Rao did not feel justified in supporting such a theory, experimental work done by me on isolated livers has definitely proved Dr Ramachandra Rao's theory Moreover, I believe that the preliminary vaso-constriction in addition to causing damage and swelling of the endothelium of the hepatic venous terminals, when it is sustained, later on, leads to permanent sclerosis and occlusion of the hepatic venous radicals presenting the characteristic pathological picture of Infantile Hepatic Cirrhosis This theory has further been supplemented by the pathological

study of livers of experimental animals in which toxic cirrhosis has been induced and which have died at varying periods of induction. To prevent vasospasm and to counteract the sympatheticotonia, a vago-mimetic drug is required and the choice is Acetyl Choline I give 0 1 gram of Acetyl Choline (Roche or B. D H) in 1 c c distilled water subcutaneously, once in three days No ill effects as recorded in the books, such as fall of blood pressure etc., are encountered The number of injections required depends upon the case. This line of treatment requires further study and confirmation

Sarma has been using for sometime the splenic hormone (Prosplen-Ifah) in ¼-½ c c. intra-muscular injections twice a week, and found marked improvement in a couple of cases, but there is no pathological rationale in its usage.

The other drugs prescribed commonly are the usual Ammonium Chloride, Sodii Salicylas, Ext Kalmegh Co, Ext. Punarnava, Liq, Ext. Gulvel Liq, and Tinct Rhei Co, A few proprietory medicines are Cirobil and Cirolysin The best patent medicine to supplement the previously outlined treatment, if the patient can afford, is Chionia, given 1 tea-spoon-full in ½ oz. of water twice a day after food

The *rationale* of using stock B Coli vaccines, as advocated by Lahiri is entirely misconceived. Lahiri's finding of B coli in blood cultures is to be interpreted as due to faulty filtration power of the liver in very advanced cases, leading to the escape of the organisms from the intestinal tract through the portal stream to the general circulation.

ii. *Symptomatic :*

1. *Fever:* Usually it is due to a mild infection of the lungs, and a diaphoretic mixture containing Sodii Salicylas and Ammonium Benzoas is the best Abdominal distension is relieved by Pituitrin injections

2 *Haemorrhagic tendency :* Bleeding especially in the terminal stages occurs from the mucous surfaces and is best treated with Vitamin C and Calcium In severe cases Haemoplastic Serum is to be used

3. *Anaemia :* An anaemia tending towards the macrocytic type has been found by me in a good number of cases This is probably partly nutritional and partly due to deficient storage and utilization of the anti-anaemic principle in the liver For this, the treatment of choice is a weekly injection of 2 c c of an efficient liver extract like Hepatex T. The children do not tolerate any iron preparation orally as they invariably get diarrhoea

4 *Constipation:* Castor oil is to be avoided as it produces an after constipation The ideal purgatives are small doses of Sodii Sulphas, or Milk of Magnesia

5 *Diarrhoea:* The commonly used Bismuth and Kaolin mixtures are to be employed

6. *Dropsy:* When dropsy appears suddenly and is generalised, Calcium-Diuretin, Vitamin C and cardiac tonics are indicated.

7. *Ascites:* Ascites should not be tapped except when the respiratory and cardiac embarassments are very severe The children do not stand more than 6 to 7 tappings and more over, since the kidneys are acting very well, mercurial diuretics like Esidrone or Salyrgan might be employed As usual the preliminary administration of Ammonium Chloride enhances the urinary output

8 *Jaundice* · Plenty of Glucose and calcium are recommended. It is not worth while trying the bile-salt substitution therapy.

Little hope is to be entertained regarding recovery when a patient is seen in a state complicated by Pneumonia, Nephritis, Tuberculosis, Uraemia Cholaemia, Septic fever, or bowel haemorrhages which are usually terminal events.

Prophylactic: There is nothing much to say about prophylaxis except proper ante and post-natal care of the mother and careful dietery of the child. Mallick prohibits mother's milk when the disease is familial a healthy wet-nurse being substituted Sarma lays great stress on the proper antenatal care of the mother so as to prevent toxaemias of pregnancy Mother's milk is essentially ideal for the baby especially so during its first six months of life. Encouragement of breast feeding is thus an all important point in non-familial cases.

I appeal to all practitioners not to pass on their cases of Infantile Cirrhosis to the vendors of secret liver specifics, but to try some of the drugs that I have discussed especially Acetyl Choline and Vitamin C I am indebted to Dr Ramachandra Rao, M B, Ph D (Lond), Professor of Pathology, Madras Medical College, under whom I had the rare privilege of working as a Research Scholar, and to my chief, Dr P Arunachalam, M D. (Mad), M R C P (Lond) T D D (Wales) and D.M R, (Lond), Professor of Clinical Medicine, Stanley Medical College and Physician, Government Stanley Hospital, in whose wards Acetyl Choline was tried and who was always encouraging me in my efforts. I have to express my greatful thanks to the Indian Research Fund Association for the grant that has enabled me to conduct the Research at the Madras Medical College.

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An Address

by

Dr P. RAMA RAU, D M R (Vienna)

TO THE NEW DIPLOMA HOLDERS OF THE YEAR AT THE STANLEY MEDICAL COLLEGE

Mr. President and Gentlemen,

I appreciate the honour you have done me, in asking me to address you, who are on the threshold of your life career I passed through the portals of this institution in 1920 I cannot help being struck by the enormous progress that has been made in this institution, in these last 20 years, in the shape of new hospital, college, and hostel buildings, the modern equipment, and the highly qualified personnel I therefore venture to preface my address with a short review of the history of Medicine which is itself a record of continuous progress

Contributions of modern medicine in its various branches to the health and happiness of man and to social progress, have been one of the wonders of our generation. The observations of Hippocrates in clinical medicine furnished in the suceeding century, a foundation for the monumental work of Aristotle in the basic sciences, and the discoveries of Harvey were followed by rejection of dogmas and application clinically of the knowledge gained by observation To follow the gradual progress from the period of the unaided eye, through the era of the development of the microscope and its revolution of scientific medicine, to the discoveries of x-rays and radium and the recent extra-ordinary developments in medicine and surgery will be most educative and interesting

From the time of Aristotle (384-322 B C.) to the discovery of the microscope, we find that in the many centuries of the Dark Ages little progress was made in the medical sciences, although some knowledge of anatomy and physiology and clinical symptomatology was recorded. The compound microscope, the earliest crude form of which was introduced by the Jansens about 1590, was the most significant contribution of all time, which was to revolutionise medicine and change the history of mankind This instrument opened a new scientific world and enabled the student to recognise the body tissue in health and in disease

While the discovery of the microscope came too late to aid Harvey (1578-1657) greatly in his demonstration of the circulation of the blood, it gave a crude magnifying instrument to William Hunter (1718-1783) and John Hunter (1729 1793), and the modern microscope to Pasteur and Lister The microscope in a relatively few years extended the breadth and depth of understanding and developed a new anatomy of the minute and the new physiology which went along with it

With the aid of the imperfect microscope, the two brothers, William and John Hunter, co-ordinated knowledge in Anatomy, Physiology and Pathology so that for the first time these basic sciences became a coherent whole and medicine was placed on a sound foundation The greatest single contribution of the Hunters was the discovery of the lymphatic system, as related to the organs and tissues of the body, which in many respects was as far-rea-

ching as the discovery of the circulation of the blood. By the aid of the microscope they were able to follow the course of injections of dyes into vascular and lymph channels, a method which was introduced by Belchier of Guy's Hospital in 1764, knowledge of which has been utilised by diagnostic radiology in the demonstation of the circulation in health and in disease

Contemporary with the Hunters was Edward Jenner (1749-1823) from whose work the whole fabric of preventive medicine and immunisation was brought into existence

Early in the ninteenth century came evidence of growing interest in histology Schneiden and Schwann in 1838, first described the cell, which Virchow said was the unit of life And from Virchow and his school, through the cell theory, came a newer and better understanding of anatomy and physiology which he called "cellular pathology" The greater part of this new knowledge came from the study of material obtained from necropsy However, while dead-house pathology gave an enormous amount of knowledge, it did not lead to rapid improvement in therapeusis The physical changes resulting from terminal causes such as infections, so often obscured the early disease manifestations, that postmortem study gave too little understanding of the disease in its curable stages. Interpretation of the pathology of the living is the outstanding feature of modern medicine and in this field, diagnostic radiology has been of incomparable service in carrying sight into the unseen spaces of the living body

A hundred years after the Hunters, there were born two men, Pasteur (1822-1895), and Lister (1827-1912), through whom medicine was reborn. With improved microscopes and staining and cultural methods, Pasteur, of France, proved his theory of the origin of disease in micro-organisms, and changed the entire aspect of medicine. Lister, of England, related micro-organisms to infections and putrefactive processes; hospitals for the first time became safe, and modern surgery developed

In 1882, Koch, with cultural methods and the microscope, made his demonstration of the bacillus of tuberculosis The disease tuberculosis had been one of the major causes of the death of man, and Koch's discovery, showed what had been suspected only, till then, that tuberculosis was not a hereditary disease, but that it was essentially contagious, that it was a disease of the lower animals as well as of man, although manifesting itself by attacking tissues not commonly involved in man.

Not until the twentieth century was the cause of syphilis determined, by Schaudinn in 1905 Syphilis has existed from ancient times, and as the result of travel and admixture of peoples, it spread over the world With the scientific demonstration of the spirochaeta pallida, medicine again advanced in its work of stamping out disease and prolonging the life of man Roentgen was working with Crooke's tubes when he discovered the x-rays in 1895. The Curies discovered radium in 1898. Through the application of the x-rays and radium, knowledge of radiology was advanced with extra-ordinary speed, and all the related sciences of medicine and surgery progressed rapidly with the aid of the new instruments of precision connected with radiology.

Because of extra-ordinary development which has come from radiology, we are not only able to acquire more knowledge but have learned that the x-rays, beta rays and gamma rays have an enormous and growing therapeutic value. As a result, medicine and surgery find themselves fortified by relatively new agents which day by day are being used increasingly in the treatment of disease We recognise that advanced cancer in certain situations which is beyond reasonable possibility of cure by the knife, can with but little risk be treated with radiant energy in the form of x-rays and radium and even cured, if it has not progressed beyond the immediate site We find that certain cellular tumours which are extremely active in growth can be treated with radiology with better results than with surgery, and without serious risk

That this a changing world is a trite saying. An author has said "Nothing is permanent in history but the element of change itself" And between these changes there are transitory periods during which one has to adapt oneself to the changing circumstances. Rigid regulations are slackened to suit, and tide over the period smoothly Rapid changes have been made in medical education and in the medical services in India, especially in our province. This is as it ought to be, and the present generation should be proud of these changes and the opportunities that follow Medical schools have been abolished and those of us who are L.M.P.'s will disappear from the medical services in the next generation

As medicine has become more and more and intricate as the field of technical knowledge has expanded, the majority of us have ceased to be "Doctors" which literally means 'one who is learned,' and have lost our interest for knowledge in fields other than those that concern our daily work; and so we have become highly trained technicians The old time family physician was a generation ago, the father confessor and adviser to persons, not only in matters of health but in economics and human relationships of all kinds—in other words the Doctor was the friend, philosopher and guide in his group. If there is a tendency to drift away from this tradition, a timely warning to you, the younger men in the profession, should help you get back that seat of confidence.

Having said so much in general, I might be permitted to particulary tell you, who qualified for your Diplomas this year, that you need not have a gloomy outlook of your future. You need not suffer from any complexes, and if you will only remember your profession is a science which has been, is, and will for all time, develop and advance in strides, and if you keep yourself abreast with the developments from time to time, are sincere in your work and sympathetic to those who are afflicted and come to you for relief, your task is eased considerably; you are bound to meet with success. Be conscientious in whatever you do, even if others differ from you Adequate information concerning a disease can be obtained only at the bedside. Develop that bed side manner which is so essential to a physician and put your patient at ease in mind as well as in body by your sympathy and understanding Preserve your personality, Chances of entering government service are poor at the present time, and as such, most of you will be private practitioners in rural or urban areas, There is one thing about human

nature—a patient however poor he may be or however well placed, will go to the doctor in whom he has confidence; so go ahead, be well informed with the latest advances, your whole future is before you; your future is in your hands and you can rise to eminence in your profession

About opportunities for higher qualifications, specialisations and post-graduate studies in our country, I might be permitted say a few words

You cannot blame the University because it has put further restrictions on L.M.P's taking the M B, B S, course. It is dictated to, by the Indian Medical Council and until there is a change of mind there, our Madras University cannot help us Are not the Andhra Graduates suffering?

But one thing I may be permitted to suggest—as far as Post-Graduate work and Diplomas are concerned, I think our University Authorities could throw open these Post-Graduate courses to all medical men and women who are on the Register irrespective of their qualifications They may hold a competitive examination in suitable subjects pertaing to the specialities concerned. The Post-Graduate diplomas are only evidence of having undergone specialised training Let us at least see the day when there are no more L G O's and D G O.'s, L O.'s and D O's or as I am told of the new Diploma to be instituted in Radiology, L M R and D M R. This is a domestic affair of the University, these Post-Graduate courses, and I do not think that the Indian Medical Council will interfere In view of the changes in the medical education in this province, I think it is time the authorities of this University as well the gove rnmenttook this into their serious consideration Madras is the first in India and is still, I think, the only University to allow Licentiates to take the M B. degree and I hope that they will again set the example to the other Universities as being the most progressive by allowing Licentiates to take Post-Graduate Diplomas like the D. G O., D O, and such others as are to be instituted. The present time may be considered a transitory period from one stage to another in medical education and may I appeal to the University to slacken their regulations somewhat, to the benefit of the whole community in general and the Licenciates in special.

In Vienna, medical men who were duly qualified in their respective countries and were on the Register, were admitted into their University Post-Graduate courses The reputation of that University as a centre for learning and as the Mecca for medicine is acknowledged all the world over There is no reason why the Madras University and Hospitals should not aspire to a similar reputation by throwing open their post-graduate courses open to all who are on the Medical Register.

In conclusion, my advice is, be disciplined, develop your powers of observation and be a student of medicine all your life You have just received the basic training necessary, and your duty is, to apply the same in practice, and give succour to the afflicted that come to you for relief. Belong to a Medical Association—by discussing with your colleagues freely your cases, your difficulties and experiences, you will advance in your profession There are people in our profession who refuse to learn after they qualify, they are fortunately few and naturally degenerate. There are others who learn from their own mis-

takes and these stagnate or progress slowly The best of us are those who learn also from others' mistakes I want you to belong to this third group—and this is the advantage of joining a medical society. In dealing with your patients, sympathy and understanding is necessary. To quote from Hippocrates. "To serve the art of medicine as it should be served, one must love his fellowmen."

In fine I congratulate all of you who have received your diplomas, prizes and medals for proficiency and wish you a bright and successful career If I have impressed on you that the future is not so dark after all, I feel I can justify occupying your time all this while. I wish you all the best.

Book Reviews

Essays on Cardiology By Dr Jaigopal I.M J Publications, Madras, 1940. Price : Re. 1.

These are a series of essays, originally contributed to the *Indian Medical Journal* and now brought together and published in book form They deal with the principles of the diagnosis and treatment of the common disorders of the heart The author could have incorporated a chapter on electrocardiography, for, this useful diagnostic aid is very much availed of in the present day The book is thoroughly readable.

K. R. C H.

Trends in Organised Medicine in India By Dr. A. Viswanathan, I.M J, Publications, Madras, 1940 Price: Annas 8.

Dr. Viswanathan, the Editor of the *Indian Medical Journal*, deals with the problems of medical organisation and of medical relief in this country in the book under review He points out that the disorganised state of the medical profession in this country has retarded the healthy growth of medical practice and suggests remedies there of He compares the system of medical relief as it obtains in England, Germany and Russia with the system in India It is a thought provoking publication and, as Dr Tirumurthi says in the Foreword, the author has dealt with the subject with a "legitimate national outlook"

K R C H

Abstracts and Notes

CHOLECYSTOGRAPHY

A. B MacLean in *Medical Press and Circular*. Aug 7, 1940 says that the visualisation of the gall-bladder wss made possible by Graham in 1924, who after several trials found tnat Sodium tetraiodophenolphthalein is excreted by the liver on intravenous injection. Later oral administration of the dye has become the method of choice.

Films are taken of the gall bladder region. If gallstones are discovered there is no particular need to proceed with the examination Only calcified gallstones are thus visualised.

The patient is given a dose of hydrated sodium tetraiodophenolphthalein, usually in the evening following a light farinaceous meal—avoiding fat, e g., butter Next morning he presents himself in the fasting state for x-ray examination, that is, from 12 to 14 hours after the ingestion of the dye, when the concentration of the dye in the gall-bladder has reached its maximum If the gall-bladder shows well at this stage, it is the custom of some workers to give a fatty drink, which causes the gall-bladder to contract and empty in from one to two hours. The patient is then given a barium meal. It shows up the close relationship of the gall-bladder to the first part of the duodenum and pyloric antrum; if the gall-bladder is enlarged it may produce an impression on either duodenum or stomach or both; periduodenitis originating from an inflamed gall-bladder, shows its effects by deformitiy of the duodenal bulb; the stomach itself, in cases where gall-bladder trouble is present, is frequently found to be smaller than normal and is slightly displaced and held slightly to the right side.

The dye is absorbed into the portal circulation, a process, which commences from 30 minutes to one hour after ingestion, and is sometimes accompanied by nausea and vomiting. After absorption by the liver, the dye is excreted in the bile and concentrated with the bile in the gall-bladder.

Filling of the gall-bladder depends on several factors: 1. Healthy mucous coat and its power to concentrate bile. 2 Normal biliary secretion. 3. Patent cystic and bile ducts When these conditions are absent, no filling will occur

If cholecystitis is present, filling may be absent or faint A rare operation finding is, that a well filled gall-bladder has been subject to cholecystitis. The cystic duct may be plugged with mucus or stone; or it may be obliterated by adhesions The gall-bladder itself may be filled by pent up mucus, so that no bile can enter the gall-bladder. The test is contra-indicated when there is jaundice, or a degenerative condition of the liver such as cirrhosis or yellow atrophy or chronic kidney disease. In cases where the gallstones are invisible on direct examination, the filling or partial filling of the gall-bladder by the dye may demonstrate the stones as negative shadows, and sometimes the outer layers of the stones may absorb some iodine and thus be rendered visible.

It has recently been found that the use of magnesium tetraiodophenolphthalein eliminates the tendency to nausea and vomiting which occurs with the sodium salt.

A. Hartung and J Grossman in the *Illinois Medical Journal,* September 1940 say that the impression that an apparently normally functioning gall-bladder is in fact a normal one has been proved by operation to be the one most often in error Delayed emptying of the normal appearing gall-bladder is pathological. In a normal gall-bladder the bile which has collected in it and been concentrated by its mucosa, is expelled by tonic contractions of its muscular wall through the cystic and common ducts into the duodenum; contractions are initiated by the hormone *crytokinin* which is derived from the duodenal and upper jejunal mucosa in response to fat digestion; simultaneously with the contraction of the gall-bladder the sphincter of Oddi and the duodenal musculature relax, permitting the entry of the bile into the duodenum There is probably a reciprocal, a functional relationship between the gall-bladder, duodenum and the sphincter of Oddi to produce this type of action, and also nervous reflex studies with the aid of cholecystography have shown that evacuation of the of the gall-bladder after a fatty meal occurs in successive phases of contraction. Following a latent period of about one minute after ingestion of the meal, a small amount of bile is discharged during the first two minutes A short pause then occurs after which the principal period of discharge takes place From 50 to 75 per cent of the contents are evacuated in from 16 to 60 minutes (average 32 minutes) A period of quiescence then follows, lasting 5 to 45 minutes after which another phase of contraction occurs, resulting in the emptying of varying amounts of residue One or more additional phases usually lead to complete emptying the time varying in different individuals, A decrease in volume of at least 50 per cent one hour after the fat meal is generally regarded as a normal response.

Delayed emptying of the gall-bladder after a fatty meal is an index of disease, in that bile stasis eventually leads to inflammatory changes or stone formation Earlier recognition by cholecystography and adequate treatment may obviate some of the after effects.

FLUOROSIS

The report of the Public Health Commissioner with the Government of India for the year 1939 says that the Health Officer of the Nellore District reported about the wide prevalence of a disease characterised by lassitude and by a definite train of symptoms such as stiffness and pain in the spinal region and in various joints. A detailed study of this condition was carried out at the King Institute, Guindy, and it was shown to be one of chronic flourine intoxication resulting from the continued use of water containing fluorides The problem is two-fold, namely the prevalence over a comparatively wide geographical area of a dental condition commonly known as mottled enamel, and occurence in a restricted area of severe manifestations of chronic fluorine intoxication involving the spine, joints, and ligaments, to which the name "Endemic Fluorosis" has been given.

The presence of flourides in drinking water supplies has been demonstrated over a fairly wide area in Madras although sufficient work has not yet been done to delimit the fluoride areas in the province The presence of mottled enamel in children has been observed in

Chittoor and even as far south as Tinnevelly and Cape Comorin, thus suggesting a wide distribution of fluorides in drinking water supplies House to house surveys were carried out to ascertain the incidence of the condition with special reference to the customs, occupation, dietetic habits, and length of residence in the affected areas

It was found that even with a high fluoride content of the water used for drinking and cooking, the incidence of severity of chronic fluorine intoxication is greatly influenced for the better by a well balanced diet Even with a comparatively lower fluorine content in the water, an insufficiency of vitamin C and a high calcium content of the diet, results in a higher and more severe incidence of flourine intoxication. In the absece of fluorides in the water these dietetic deficiencies produce neither mottling of enamel nor bone manifestations The bone changes are of the nature of periosteal reaction Laboratory experiments on monkeys have confirmed these findings, Two factors are operative in the production of fluorine intoxication, namely, the presence of fluorides in toxic doses and an unbalanced diet with a pronounced deficiency of vitamin C

No method has so far been evolved for removing the fluorides from natural waters at a cheap cost or without elaborate apparatus not readily applicable under rural conditions An attempt was made to see whether a fluoride free water could be obtained at depths greater than 30 to 35 feet, the normal depth of fluoride bearing waters in Nellore district A borehole carried to a depth of 300 feet yielded water having a high fluoride content of 3 5 parts per million. It would thus appear that the practical solution of the problem of endemic fluorosis should be sought by remedying the nutritional defects of the population.

THE VALUE OF GOLD THERAPY IN PULMONARY TUBERCULOSIS

J. M. Murray Steven : *Medical Press and Circular* July 17, 1940.

Modern aurotherapy dates from the introduction by Mollgard of Sanocrysin, a double thiosulphate of gold and sodium and contains 37.4 per cent of gold. There is no general agreement as to its mode of action, dosage, or the indications for its use,

Mollgard in 1925 found that Sanocrysin exerted a favourable influence on tuberculous infection in calves and he believed that its action was a bactericidal one on the tubercle bacillus This view is no longer held. The most favoured theory at present is that gold, which is stored in the cells of the reticulo-endothelial system, stimulates this system, thus hastening the process of healing Recently it has been suggested that it is the thiosulphate group rather than the gold which is the active part, and there is some experimental evidence in favour of this.

Toxic effects are common during gold treatment They are now believed to be due to poisoning by metallic gold. Sanocrysin is excreted by the kidneys, large bowel, skin, and salivary glands, and hence, toxic effects are most commonly found in these organs Headache and vomiting sometimes occur immediately after injection, and a rise of temperature is common during the first 24 hours, Albuminuria is the commonest reaction but is usually transient.

Skin eruptions (morbiliform, erythematous, purpuric, occasionally going on to an exfoliative dermatitis) and gastrointestinal disturbances (loss of appetite, stomatitis, and diarrhoea are the next commonest. Joint and muscular pains, jaundice, purpura haemorrhagia, agranulocytosis and mental and nervous symptoms are sometimes found.

Dosage: A usual course of treatment is 0.05, 0.1, 0 15, 0.2, 0.3, 0.4, 0.5 gm at weekly intervals, continuing with 0.5 gm. as a maximum dose until a total of 5 to 6 5 gm. has been given The white crystalline substance is dissolved at the time of injection in warm sterile distilled water, using 2 cc. for doses under 0 3 gm. and 5 cc for doses over 0 3 gm It is given intraveously, on an empty stomach, care taken not to inject any into the perivenous tissues as this causes pain and sometimes necrosis Injections should be avoided just before and during the menstrual periods as it has been found that there is a tendency to skin eruptions at these times Some authorities aim at producing a reaction but it is better to avoid even slight ones, such as a rise of temperature, When a reaction occurs, no further injection is given until the symptoms have settled for two days, and the next dose should be either the same or decreased if the reaction is severe. Persistent albuminuria necessitates cessation of treatment. A skin eruption should be considered with great care.

Prevention and treatment of reactions: Reactions are said to be greatly reduced by using 10 cc. of 10 per cent calcium gluconate as the solvent for the sanocrysin; it is suggested that calcium reduces cell permeability and so exerts a protective action on tissue cells The sanocrysin may alternately be dissolved in sodium thiosulphate (5 cc of 20 per cent solution). Injections of liver extract give better results in prevention of accidents. The use of large doses of vitamins A, B_1, B_2, and C has prevented complications in many cases. The cure of skin eruptions is often hastened by the intravenous injections of 2 cc of contramine (a sulphur containing compound) in 10 cc of 10 per cent glucose.

Other gold compounds which can be used intramuscularly and with lesser incidence of reactions are Allochrysin, Oleosanocrysin and Solganol B

Indications: There is still no general agreement as to the type of pulmonary tuberculosis which best responds to gold therapy With simultaneous sanatorium treatment the following types of cases have done well, but it should be remembered that gold is definitely not a cure for tuberculosis

1 Recent exudative type: In these cases if induction of artificial pneumothorax on three occasions at different points is found impossible, gold is indicated

2. Fibrotic type: These cases are of considerable standing and A P. is out of the question owing to adhesions. Gold may be used, especially if there is a persistently positive sputum, and in those who have a recent exudative lesion in association with old-standing fibrotic disease. Fibrocaseous cases with relatively recent discrete tubercles is an indication for gold

3 Collapse therapy and gold: The best results are obtained by starting gold as soon as a satisfactory collapse has been produced—usually 3 or 4 weeks after induction A course of gold raises the patient's resistance In old-standing fibrotic cases, where a

phrenic avulsion or thoracoplasty is contemplated, gold is used as a preliminary to operation to improve the general condition.

Contra-indications: Old-standing cases with much fibrosis; very acute cases with marked toxaemia, such as a temperature above 101 degrees F, and cachexia; patients in terminal stages; patients presenting gastro-intestinel symptoms, whether due to intestinal tuberculosis or not; cases with renal disease, tuberculous or otherwise; where any other systemic disease such as diabetes mellitus is present.

Results: There is still much discussion as to the value of gold therapy in pulmonary tuberculosis, as any improvement may be attributed to the simultaneous sanatorium treatment. In America gold treatment has been largely abandoned as Fishberg and other workers have found no beneficial effects. In France they hold that the results do not justify the risk In England it has had a favourable reception. The benefits from gold are, fall in temperature, decrease in quantity of sputum with disappearance of bacilli there from, moist sounds in the chest clear up and radiographic disappearance of shadows of exudative lesions and increase of fibrosis Where improvement has taken place and a relapse occurs, a second course of gold may be given with benefit, after an interval of 2 or 3 months.

Journal of South Indian Medicine

NOTICE

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JOURNAL OF SOUTH INDIAN MEDICINE

DECEMBER 1940

The War and Medicine.

Wars have always profoundly influenced the progress of medicine. At certain periods in the history of the world, continued wars and unsettled conditions of life in affected countries have led to the arrest of all progress in the study of medicine. But more often, the urgent needs of fighting armies and fleeing civil population have stimulated the ingenuity of medical men to think out and apply more efficient methods of treatment, not alone in the field of war surgery, but equally in the department of preventive and curative aspects of medicine, Great advances were made in the field of surgery during the last Great War, from the invention of better materials and methods for dressing wounds to the repair of nerves, from the first aid measures in the field to the elaborate fixing up of broken bones at the Base. Not less striking was the progress in the field of medicine. We know better now of Trench fever and Trench nephritis which were the cause of much despair among medical men in the early months of the last war The great incidence of war neurosis during the last war has opened up a great field for investigation into the psychological aspects of disease and treatment. The progress attained in this subject has been so great that people are beginning to insist on greater attention being given to it in medical education. The epidemic of influenza which swept over the world during the final years of the great war was remarkable for its high mortality and great amount of disablements of the army in the field. The circumstances in which the epidemic arose and the appalling mortality drew the pointed attention of the medical world and the various governments concerned, to a study of this disease. Much work has been done. Though we cannot say that marked improvement has been attained in the prevention or cure of this disease, our knowledge about influenza is on the whole more definite now.

The knowledge that has been gained and the advances that have been registered as a result of the last war have come in handy in the prevention of disease and alleviation of suffering in the present war. But the present war with its more ruthless methods of fighting with cold steel and naked fire, has given rise to fresh problems for solution. And it is a matter for pride and thankfulness that medical men are able to tackle successfully new problems as rapidly as they arise. As the result of incendiary bombs, the treatment of burns

has become a major problem to deal with. The advances that have been made in the treatment of burns during the last war have been improved further and patients with burns are now being looked after with greater efficiency. Recent advances in chemotherapy have enabled us to treat dangerous war wounds more successfully In the midst of tragedy and death, medical men still find opportunities to satisfy their innate urge to look for better means of recognizing and curing the diseases of man In the recent years research has almost completely been confined to laboratories and animal experiments But the accidents of war give undreamt of opportunities for noting cause and effect in man himself Thus man replaces the experimental animal and the field takes the place of the cramped laboratories This is rather a depressing thought But even in gruesome environment, the medical man fulfills his noble destiny of ever striving for means, and better means, of relieving man of his suffering and of rescuing him from death

Wars also very greatly influence the organization of medical relief. Not only the science but also the profession is greatly affected Armies always have a large medical personnel to look after the sick and the wounded. In times of active war, armies expand rapidly and they need the services of large numbers of medical men. How great this need is, can be seen by the fact that practically the whole of the medical profession in Britain is now regimented by the state either in a part-time or full-time basis Further the rapidly expanding Expeditionary Forces require an ever increasing number of medical men. Part of this need is being met by enlisting medical men of this country into the army. We have been under the impression that probably more doctors offer their services than are actually required. We have been rather proud that such should be the case But unfortunately, from the remarks of the Surgeon General with the Government of Madras at a recent function, we understand that there has been a reluctance on the part of the medical men to offer their services to the army. On enquiry we find that this charge refers to the ranks of the subordinate medical department This is a very controversial question We are sorry we have to refer to it But since wartime is just the occasion for stopping controversies we venture to discuss the question. India is one of the very few countries with claims of civilization and orderly government where multiple standards of medical education and qualification still exist. In England where men are recruited for the Army Medical Service, medical men are all engaged as officers starting on a single basis There is no such thing as superior and subordinate ranks There is no reason why such distinctions should be perpetuted in this country even in the military department, much less in active warfare. We consider this a most suitable opportunity to put an end to this undesirable differentiation in the army medical services.

If this is done and suitable arrangements are made to meet the situation which will arise when those who go on war service return, we are sure there will be no occasion for any one to bewail the dearth of applicants for the army medical services.

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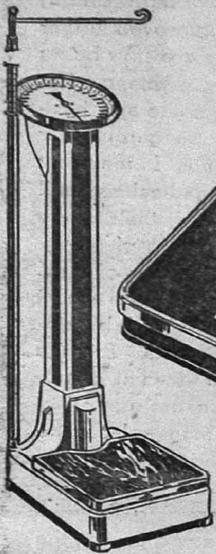

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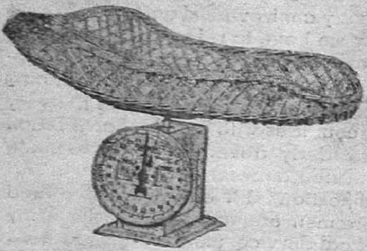

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